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# Why driverless cars will mostly be shared, not owned

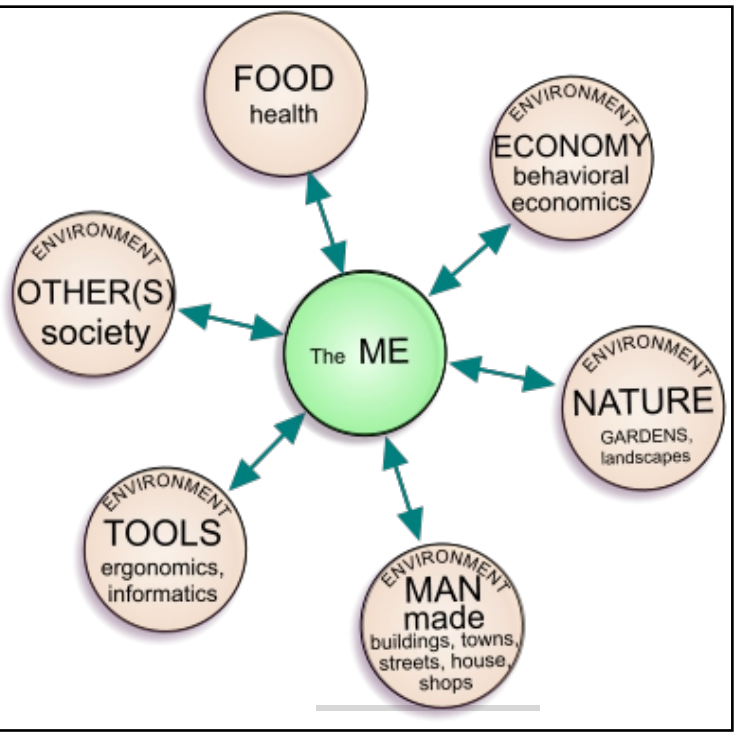
*The total number of vehicles on the roads could have halved by 2050*


The Economist explains › Mar 5th 2018 | by T.S.

WHEN will you be able to buy a driverless car that will work anywhere? This commonly asked question contains three assumptions: that autonomous vehicles (AVs) will resemble cars; that people will buy them; and that they will be capable of working on all roads in all conditions. All three of those assumptions may be

wrong. Although today's experimental vehicles are modified versions of ordinary cars, with steering wheels that eerily turn by themselves, future AVs will have no steering wheel or pedals and will come in all sorts of shapes and sizes; pods capable of carrying six or eight people may prove to be the most efficient design. Rather than work everywhere, these pods will initially operate within geographically limited and well-mapped urban areas. And they will be shared "robotaxis", summoned when needed using a ride-hailing app. The first self-driving vehicle you ride in will be shared, not owned, for a combination of technological and economic reasons.

The technology needed to get vehicles to drive themselves has not yet been perfected, but it has improved enormously over the past decade and is on the verge of working reliably, at least in relatively simple urban environments with good weather. This explains why Phoenix, Arizona, is a popular place to test AVs; Waymo, the self-driving car unit of Google's parent company, hopes to launch a robotaxi service there this year, based on Chrysler Pacifica minivans. Other robotaxi services will appear in the coming years in other cities, and the areas they cover will gradually be expanded. The initial deployment of self-driving vehicles as robotaxis makes sense because they only need to work within a particular area—and because the sensors needed for a fully autonomous AV to sense its surroundings and figure out how to respond currently cost more than the vehicle itself. That is less of a problem for a shared robotaxi, however, which will be in use and generating revenue for several hours a day. (Private cars, by contrast, are used on average only about 5% of the time.)




So economics and practicality dictate that AVs will start out as shared robotaxis. Eventually, perhaps by 2030 or so, the cost of sensors will fall and it will no longer be prohibitively expensive to buy your own self-driving vehicle. The question then is whether you would want to. For people living in cities, robotaxis could offer a far cheaper and more convenient alternative to car ownership. At the moment, travelling by Uber or another ride-hailing service costs around $2.50 a mile; but take away the driver, and that cost could fall to $0.70 a mile, reckon analysts at UBS. That is less than the $1.20 a mile it costs, on average, to run a private car (when fuel, insurance, servicing and other costs are factored in). So if robotaxis really work as advertised, many urbanites could ditch their cars and save thousands of dollars a year. UBS predicts that by 2035, 80% of people will use robotaxis in cities where they are available, and that urban car ownership will fall by 70%.

No doubt some people will still want to own a car, and will buy a self-driving one. But the total number of vehicles on the road will fall by about half from its current level, UBS predicts, and by 2050 those vehicles will be split roughly equally between robotaxis and privately owned AVs. The robotaxis, being in almost constant use, will account for the vast majority of miles travelled. With fewer private vehicles needing to be parked, vast swathes of land currently wasted on parking will be available for other uses, such as housing. As cars did

in the 20th century, AVs will redefine retailing and reshape cities, as well as providing a convenient new form of mobility.

(https://www.economist.com/news/special-report/21737418-driverless-vehicles-will-change-world-just-cars-did-them-what-went-wrong)

As with cars, which led to road deaths, pollution and congestion, there are likely to be unanticipated (and unpleasant) consequences for society from autonomous vehicles, such as a loss of privacy and the potential to use them as a means of social control.

(https://www.economist.com/news/leaders/21737501-policymakers-must-apply-lessons-horseless-carriage-driverless-car-self-driving)

Removing the horse from horse-drawn carriages was an apparently simple change that had far-reaching effects. Similarly, there is much more to autonomous vehicles than simply removing the need for a driver—and much of their impact is a consequence of the fact that they will mostly be shared, not owned.